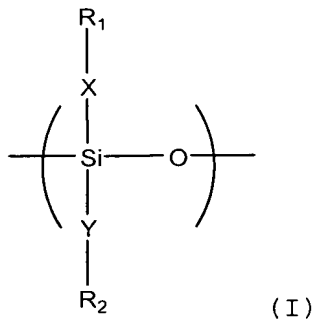


## CLAIMS

1. The use of at least one polymer  
5 comprising at least one siloxane repeating unit  
corresponding to the general formula (I) below:



in which:

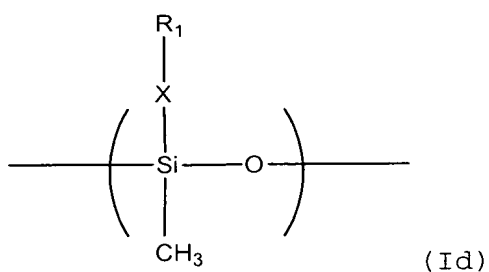
10 X and Y, which may be identical or different,  
represent a single bond or a saturated or unsaturated,  
linear hydrocarbon group containing from 1 to 50 carbon  
atoms;

R<sub>1</sub> and R<sub>2</sub>, which may be identical or different,  
15 represent a hydrogen atom, a CN group, a group C(Z)<sub>3</sub>,  
CH(Z)<sub>2</sub> or CH<sub>2</sub>Z with Z representing a halogen atom; an  
NH<sub>2</sub> group, a group NHR<sub>3</sub> or NR<sub>3</sub>R<sub>4</sub> with R<sub>3</sub> and R<sub>4</sub>  
representing, independently of each other, a halogen  
atom, a methyl group or a linear or branched, saturated  
20 or unsaturated hydrocarbon chain containing from 2 to  
20 carbon atoms and possibly one or more heteroatoms  
and/or one or more chemical functions comprising at  
least one heteroatom; on condition, however, that at  
least one from among R<sub>1</sub> and R<sub>2</sub> is not a hydrogen atom;

or of a composite comprising this polymer and one or more electrically conductive fillers, as sensitive material in a sensor for detecting one or more nitro compounds.

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2. The use as claimed in claim 1, in which the siloxane repeating unit corresponds to the particular formula (Id) below:



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in which X is a saturated or unsaturated linear hydrocarbon group containing from 1 to 50 carbon atoms, while R<sub>1</sub> has the same meaning as above.

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3. The use as claimed in claim 2, in which, in the particular formula (Id), X represents an alkylene chain containing from 2 to 10 carbon atoms.

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4. The use as claimed in claim 1, in which the siloxane repeating unit is trifluoropropylmethylsiloxane or cyanopropylmethylsiloxane.

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5. The use as claimed in claim 1, in which the polymer is chosen from

polytrifluoropropylmethyilsiloxanes and polycyanopropyl-methyilsiloxanes.

6. The use as claimed in claim 5, in which  
5 the polymer has an average molecular weight ranging from 50 to 100 000.

7. The use as claimed in claim 1, in which  
the conductive filler(s) of the composite is(are)  
10 chosen from carbon black particles and metal and metal oxide powders.

8. The use as claimed in claim 1, in which  
the polymer or the composite is used in the form of a  
15 thin film covering one or both faces of a substrate.

9. The use as claimed in claim 8, in which  
the thin film is from 10 angstroms to 100 microns thick.

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10. The use as claimed in claim 8, in which  
the thin film is prepared via a technique chosen from  
spraying, spin coating, drop coating, dip coating, the  
Langmuir-Blodgett technique, electroplating and *in situ*  
25 polymerization of a precursor monomer of the polymer.

11. The use as claimed in claim 1, in which  
the detection of the nitro compound(s) by the chemical  
sensor is performed by measuring a variation in the  
30 mass of the polymer or in the electrical conductivity of the composite.

12. The use as claimed in claim 1, in which the sensor is a gravimetric sensor.

5           13. The use as claimed in claim 12, in which the sensor is a quartz microbalance sensor.

14. The use as claimed in claim 1, in which the sensor is a resistive sensor.

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15. The use as claimed in claim 1, in which the sensor is a microsensor that comprises one or more gravimetric sensors and/or one or more resistive sensors, at least one of these sensors comprising a polymer or a composite as defined above.

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16. The use as claimed in claim 1, in which the nitro compound(s) to be detected is(are) chosen from nitroaromatic compounds, nitroamines, nitrosamines and nitric esters.

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17. The use as claimed in claim 1, in which the nitro compound(s) to be detected is(are) in solid, liquid or gaseous form.

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18. The use as claimed in claim 1, in which the nitro compound(s) to be detected is(are) chosen from nitrobenzene, dinitrobenzene, trinitrobenzene, nitrotoluene, dinitrotoluene, trinitrotoluene, dinitrofluorobenzene, dinitrotrifluoromethoxybenzene, aminodinitrotoluene, dinitrotrifluoromethylbenzene,

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chlorodinitrotrifluoromethylbenzene, hexanitrostilbene,  
trinitrophenylmethylnitramine and trinitrophenol.

19. The use as claimed in claim 1, for detecting  
5 explosives.